Claims.

1). An articulated chain for drive transmission in bicycles, comprising:

a plurality of external links (2) each of which exhibits at least a first external plate (4) having a first end (4a) an a second end (4b), and a second external plate (5), parallel to the first external plate (4) and having a first end (5a) and a second end (5b);

a plurality of rotation pivots (6) interpositioned between the first external plate (4) and the second external plate (5) of each external link (2) in positions at the first ends (4a, 5a) and the second ends (4b) of the respective first external plate (4) and the second external plate (5);

a plurality of internal links (3), each of which internal links (3) exhibits at least a first internal plate (7) having a first end (7a) and a second end (7b) and a second internal plate (8), parallel to the first internal plate (7) and having a first end (8a) and a second end (8b);

a plurality of bushes (9) interpositioned between the first internal plate (7) and the second internal plate (8) of each internal link (3) at the first ends (7a, 8a) and the second ends (7b, 8b) thereof, each of the rotation pivots (6) being inserted coaxially into a bush (9) of the plurality of bushes (9), for defining an alternating succession of the external links (2) and the internal links (3) which are rotatably and consecutively connected about respective main rotation axes (X);

each of the plurality of bushes (9) defining, with a respective pivot (6), a spherical coupling surface for allowing a rotation between an internal link (3) and an adjacent external link (2), about a perpendicular axis to the main rotation axis (X),

wherein it comprises anti-rotation elements (12) which reduce a possibility of

rotation with respect to an alignment direction (y) of each pair of links being an internal link (3) and an external link (2).

2). The chain of claim 1, wherein the anti-rotation elements (12) comprise spacers (13a, 13b) interpositioned between the external plates (4, 5) of each external link (2) and the internal plates (7, 8) of each internal link (3) at the respective ends thereof, the spacers (13a, 13b) reducing a possibility of torsional rotation between each pair of external links (2) and internal links (3) about a longitudinal alignment axis (Y) of the pair which is perpendicular to a corresponding main rotation axis (X) thereof.

3). The chain of claim 2, wherein the spacers (13a, 13b) comprise, for each main rotation axis (X), a first pair of the spacers (13a) interpositioned between the first external plate (4) and the first internal plate (7), and a second pair of the spacers (13b) interpositioned between the second external plate (5) and the second internal plate (8), and wherein each of the first pair and the second pair of spacers is formed by two spacers arranged in proximity of edges of the respective first and second external plate and the first and second internal plate, in positions which are symmetrically opposite with respect to the longitudinal axis (Y) of the link.

4). The chain of claim 2, wherein the spacers (13a, 13b) comprise, for each main rotation axis (X), a first spacer (13a) interpositioned between the first external plate (4) and the first internal plate (7) and a second spacer (13b) interpositioned between the second external plate (5) and the second internal plate (8) and wherein the first spacer (13a) and the second spacer (13b) are arranged in proximity of edges of the respective external plate (4) and the internal plate (7) and are aligned along a straight line which is parallel to the corresponding main rotation axis (X).

5). The chain of claim 3, wherein each of the spacers (13a, 13b) exhibits a convex

conformation having a spherical profile.

6). The chain of claim 3, wherein the spacers (13a, 13b) are solidly constrained to the external plates (4, 5) of each external link (2).

7). The chain of claim 3, wherein the spacers (13a, 13b) are solidly constrained to the internal plates (7, 8) of each internal link (3).

8). The chain of claim 6, wherein each of the spacers (13a, 13b) is defined by a convex swell obtained by plastic deformation of an edge zone of a corresponding external plate (4, 5).

9). The chain of claim 6, wherein each of the spacers (13a, 13b) is defined by a shaped element connected to an edge zone of a corresponding external plate (4, 5).

10). The chain of claim 7, wherein each of the spacers (13a, 13b) is defined by a convex swelling obtained by plastic deformation of an edge zone of a corresponding internal plate (7, 8).

11). The chain of claim 8, wherein each of the spacers (13a, 13b) is defined by a shaped element connected to an edge zone of a corresponding internal plate (7, 8).

12). The chain of claim 4, wherein each of the spacers (13a, 13b) exhibits a convex conformation having a spherical profile.

13). The chain of claim 4, wherein the spacers (13a, 13b) are solidly connected to the external plates (4, 5) of each external link (2).

14). The chain of claim 4, wherein the spacers (13a,13b) are solidly connected to the internal plates (7, 8) of each internal link (3).

15). The chain of claim 13, wherein each of the spacers (13a, 13b) is defined by a convex swelling obtained by plastic deformation of an edge zone of the corresponding external plate (4, 5).

16). The chain of claim 13, wherein each of the spacers (13a, 13b) is defined by

a shaped element connected to an edge zone of the corresponding external plate (4, 5).

17). The chain of claim 14, wherein each of the spacers (13a, 13b) is defined by a convex swelling obtained by plastic deformation of an edge zone of the corresponding internal plate (7, 8).

18). The chain of claim 14, wherein each of the spacers (13a, 13b) is defined by a shaped element connected to an edge zone of the corresponding internal plate (7, 8).

19). The chain of claim 1, wherein the anti-rotation elements (12) comprise swellings (14a, 14b) which are solidly connected to the external plates (4, 5) of each external link (2) and are arranged centrally thereon, the swellings (14a, 14b) projecting internally of a chamber (15) defined between the external plates (4, 5) and being of a dimension which reduces a breadth of the chamber (15) at central portions (4c, 5c) of the external plates (4, 5) to a breadth of a like chamber (16) comprised between the internal plates (7, 8).

20). The chain of claim 19, wherein the swellings (14a, 14b) exhibit a convex conformation, having a spherical profile.

21). The chain of claim 19, wherein the swellings (14a, 14b) are obtained by plastic deformation of central portions (4c, 5c) of the external plates (4, 5).

22). The chain of claim 19, wherein the swellings (14a, 14b) are obtained by recessing and projecting plastic deformation of central portions (4c, 5c) of the external plates (4, 5).

23). The chain of claim 19, wherein the swellings (14a, 14b) are defined by shaped elements connected to central portions (4c, 5c) of the external plates (4, 5).

24). The chain of claim 1, wherein each rotation pivot (6) exhibits a barrel shape having a spherical profile and the respective bush (9) exhibits a seating (9a)

having a straight profile.

25). The chain of claim 1, wherein each bush (9) exhibits a seating (9a) having a spherical projecting profile and the respective rotation pivot (6) exhibits a straight cylindrical shape having a straight profile.

26). The chain of claim 24, wherein the spherical profile is afforded on a surface of the rotation pivot (6) and the bush (9) has a straight profile.

27). The chain of claim 24, wherein the spherical profile is defined by an annular element (20) associated to the rotation pivot (6) and the bush (9) has a straight profile.

28). The chain of claim 25, wherein the spherical profile is exhibited on the surface of the seating (9a) of the bush (9) and the pivot (6) has a straight profile.

29). The chain of claim 24, wherein the spherical profile is defined by an annular element (20) associated to the surface of the seating (9a) of the bush (9) and the pivot has a straight profile.

30). The chain of claim 1, wherein the first internal plate (7) and the second internal plate (8) exhibit, in an intermediate portion thereof, a bevelling which narrows a section thereof in proximity of the edge thereof.